## North Coast Watershed Assessment Program

# DRAFT

## Redwood Creek Watershed Synthesis Report

The mission of the North Coast Watershed Assessment Program is to conserve and improve California's north coast anadromous salmonid populations by conducting, in cooperation with public and private landowners, systematic multi-scale assessments of watershed conditions to determine factors affecting salmonid production and recommend measures for watershed improvements.

Public Review Draft

#### Developed area on stable slopes (%)

Timber Land Use

Ranch area (%)

stable slopes

Percentage of watershed area

used for grazing livestock on

Ranch area (%) on

unstable slopes extension

Percentage of watershed area used for grazing livestock on unstable slopes

Timber Land Use

on unstable slopes

on stable slopes

Percentage of watershed area that is in high density buildings and pavement on stable slopes

> Farmed area on stable slopes (%)



Percentage of watershed area that was logged and crawler tractor yarded since 1999 on stable slopes

#### Tractor logged area on stable slopes (%), 1990 thru 1999

Percentage of watershed area that was logged and crawler tractor yarded from 1990 to 1999 on stable slopes

#### Tractor logged area on stable slopes (%), 1973 thru 1989 ImpSE2

Percentage of watershed area that was logged and crawler tractor yarded post Forest Practice Rules on stable slopes

#### Tractor logged area on stable slopes (%), 1945 thru 1972 trases

Percentage of watershed area that was logged and crawler tractor yarded pre-Forest Practice Rules, post WWII, on stable slopes

#### Tractor logged area stable slopes (%), prior to 1945 tresta

Percentage of watershed area that was logged and crawler tractor yarded prior to post-WWII on stable slopes

#### Tractor logged area on unstable slopes (%), 2000 thru present tentuto

Percentage of watershed area that was logged and crawler tractor yarded since 1999 on unstable slopes

#### Tractor logged area on unstable

Percentage of watershed area that was logged and crawler tractor yarded from 1990 to 1999 on unstable slopes

#### Tractor logged area on unstable

Percentage of watershed area that was logged and crawler tractor yarded post Forest Practice Rules on unstable slopes

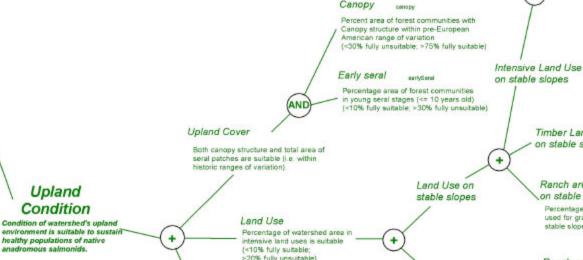
#### Tractor logged area on unstable slopes(%), 1945 thru 1972 mbuts

Percentage of watershed area that was logged and crawler tractor yarded post WWII and pre Forest Practice Rules on

#### Tractor logged area on unstable slopes (%), prior to 1945 tmbUE4

Percentage of watershed area that was logged and crawler tractor yarded prior to post WWII on unstable slopes





>20% fully unsuitable)

Slope Stability

Percentage of watershed area with unstable slopes is suitable (<5% fully suitable; >20% fully unsuitable)

Area unstable slopes unstablispe

Land Use on

unstable slopes

+

Intensive Land Use

on unstable slopes

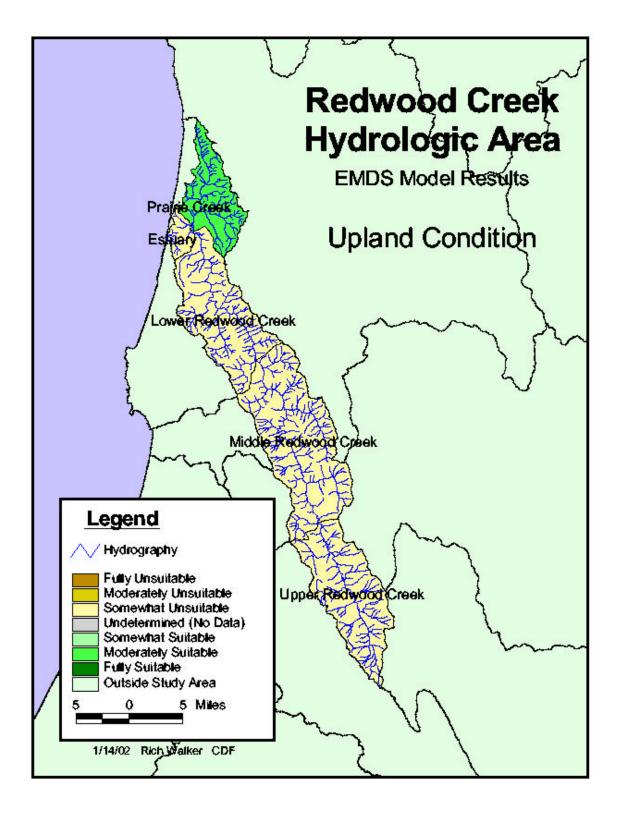
Percentage of watershed area with geologically unstable slopes (from DMG maps, or log(QT) <= 2.8)

Developed area on unstable slopes (%)

> Percentage of watershed area that is in high density buildings and pavement on unstable slopes

Farmed area on unstable slopes (%)

Percentage of watershed area in intensive crop cultivation on unstable slopes.



#### **UPLAND CONDITION –**

Proposition:

The condition of the upland in the Planning Watershed is suitable for sustaining healthy populations of native anadromous salmonids

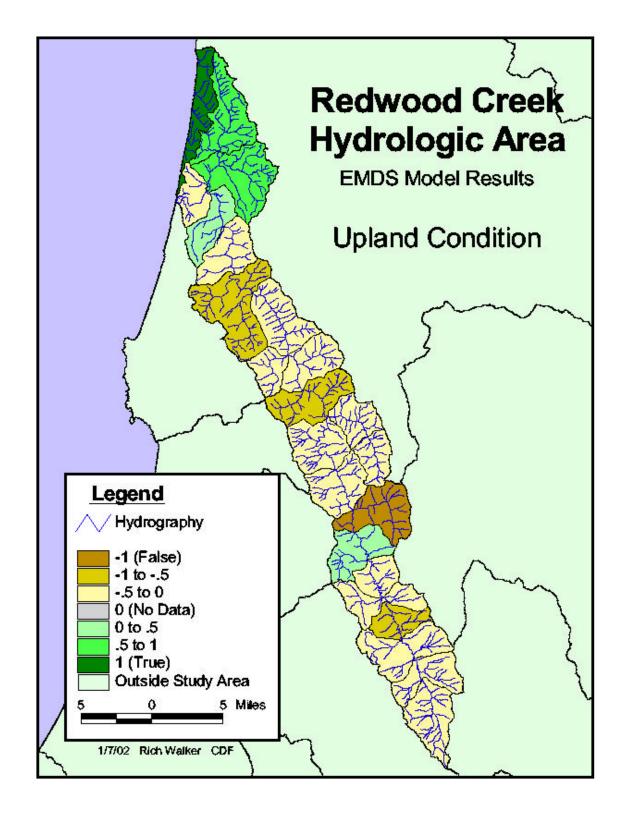
Evaluated as the mean value of:

**UPLAND COVER** – from Canopy and Seral Openings

**LAND USE** – from current intensive and extensive land use, and recent and historic timber harvest

**SLOPE STABILITY** – % area of unstable slopes

NOTE: Truth values at the highest levels represent the combined scores from lower level networks and thus are not calculated using a dependency curve.



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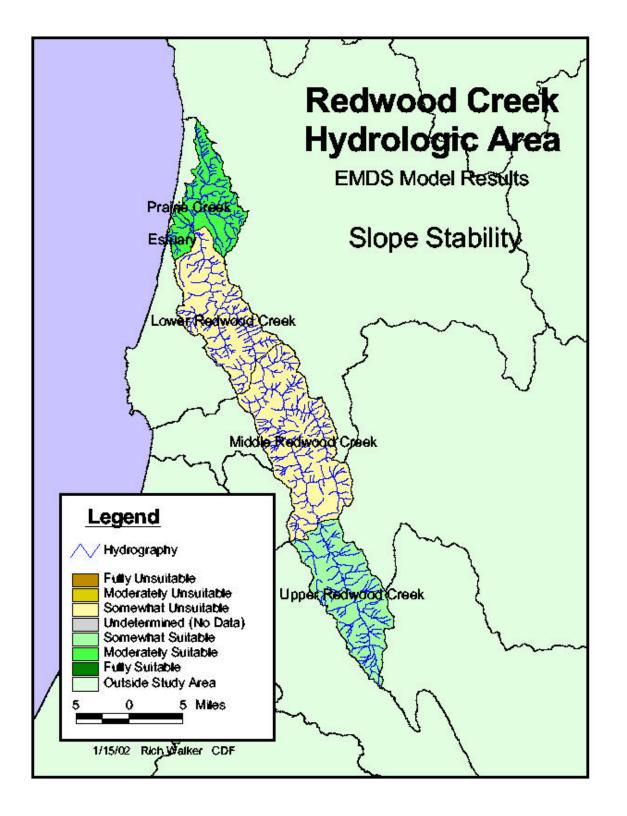
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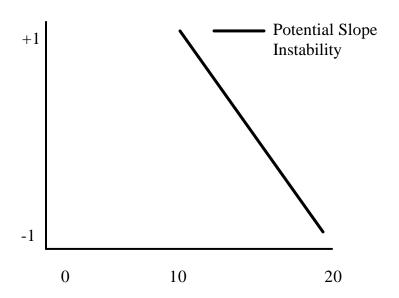
## **SLOPE STABILITY -**

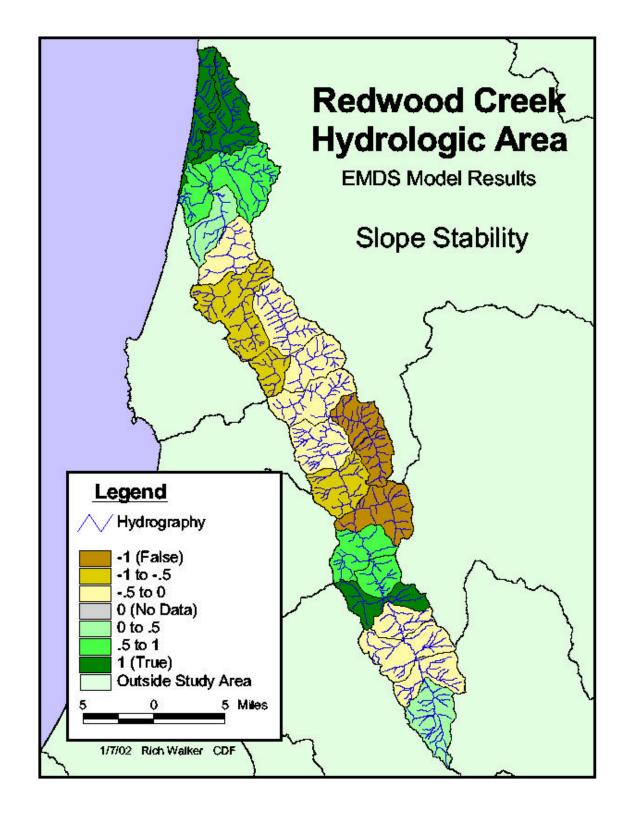
## Proposition:

The natural slope stability in the Planning Watershed is suitable for sustaining healthy populations of native anadromous salmonids

Percentage of the planning watershed with significant erosion hazard. Potential unstable slopes are currently defined using SHALSTAB classes (q/T ratio), where  $\log(q/T) \le -2.8$ .

Break Points: 12% low, 18% high Units: area/area (%)





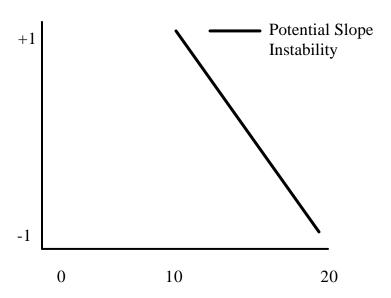
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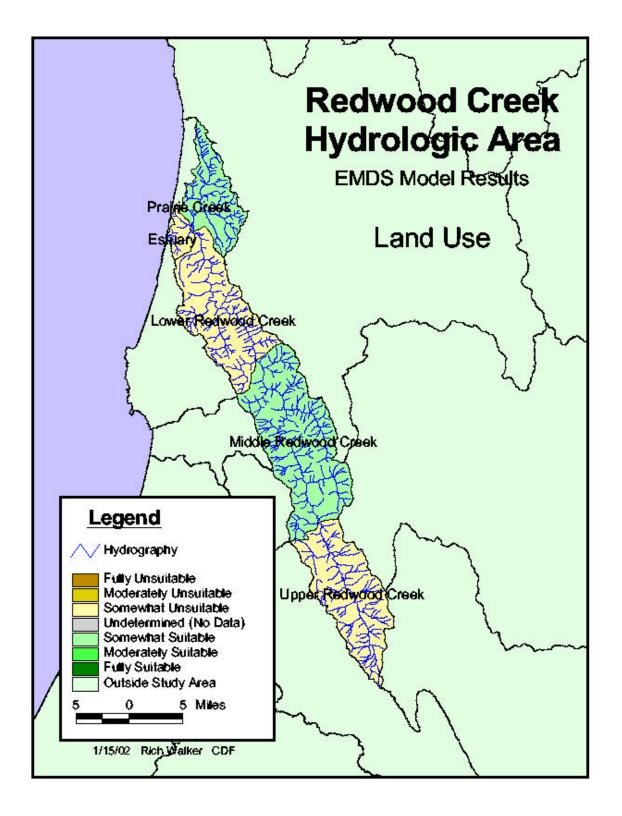
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#### LAND USE -

## Proposition:

Current and historic land use in the Planning Watershed are suitable for sustaining healthy populations of native anadromous salmonids

Percentages of the land area of the watershed are split up by potential slope stability (stable vs. unstable) and weighted by intensity (f(time since occurrence, activity)).

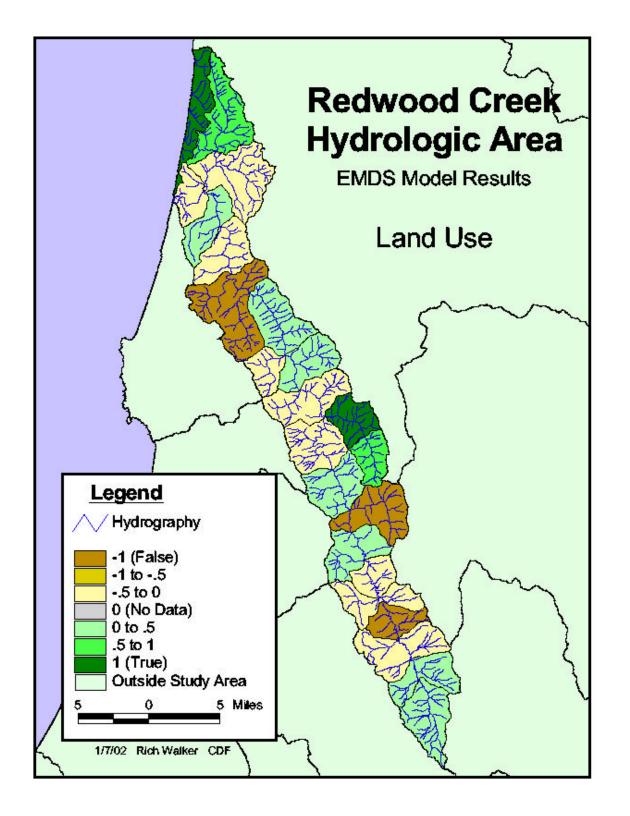
**INTENSIVE** – current permanent high density roads and buildings and row crop cultivation

**TIMBER HARVEST** – tractor logged and yarded, according to era:

- -Last two years
- -1990 through 1999
- -1973 through 1989
- -1945 through 1972
- -Prior to 1945

**EXTENSIVE** – current livestock use

Truth values were determined by fitting normal distribution to planning watershed land use values, then mapping 0<sup>th</sup> percentile to +1 (true) and 100<sup>th</sup> percentile to -1 (false).



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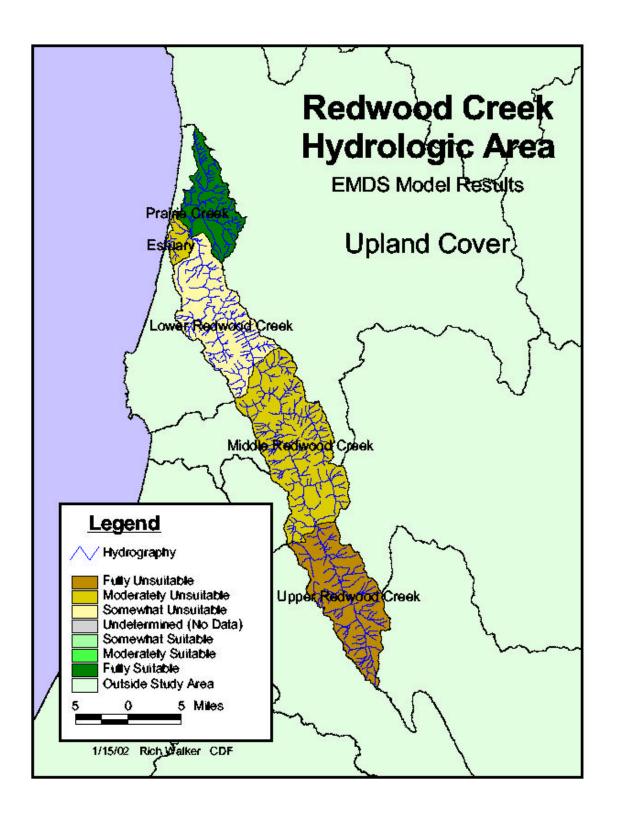
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#### **UPLAND COVER –**

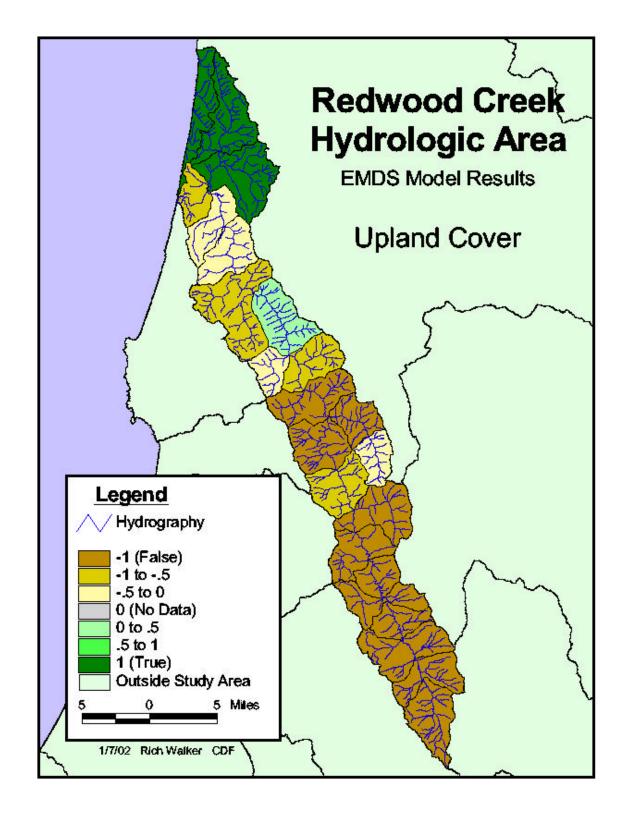
#### Proposition:

The condition of the natural vegetation in the upland of the Planning Watershed is suitable for sustaining healthy populations of native anadromous salmonids

Evaluated from:

**CANOPY** – percent of vegetation within pre-EuroAmerican settlement range of variation

**SERAL OPENINGS** – percent of area in vegetation <= 10 years since last stand-replacing disturbance



#### **UPLAND COVER –**

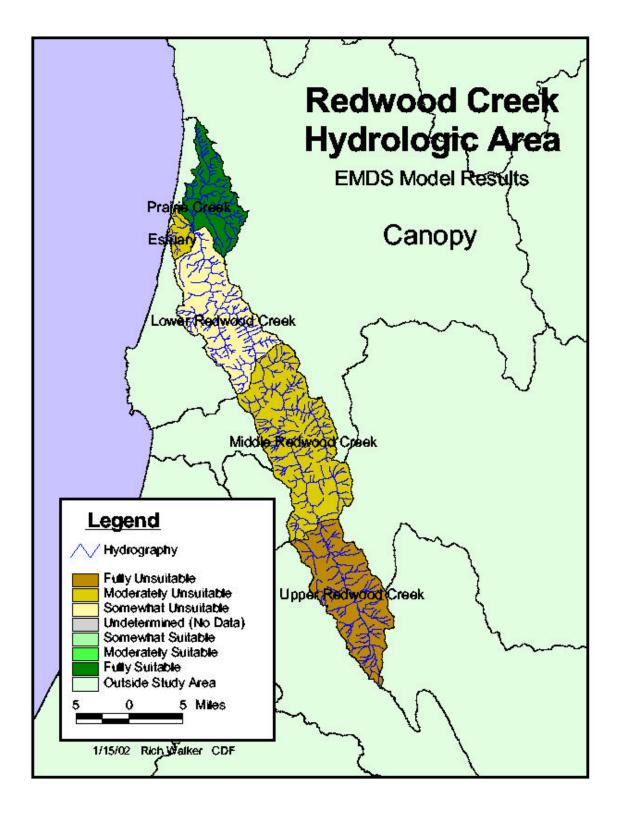
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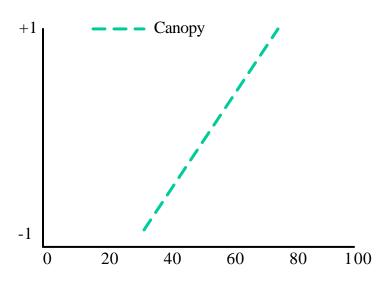
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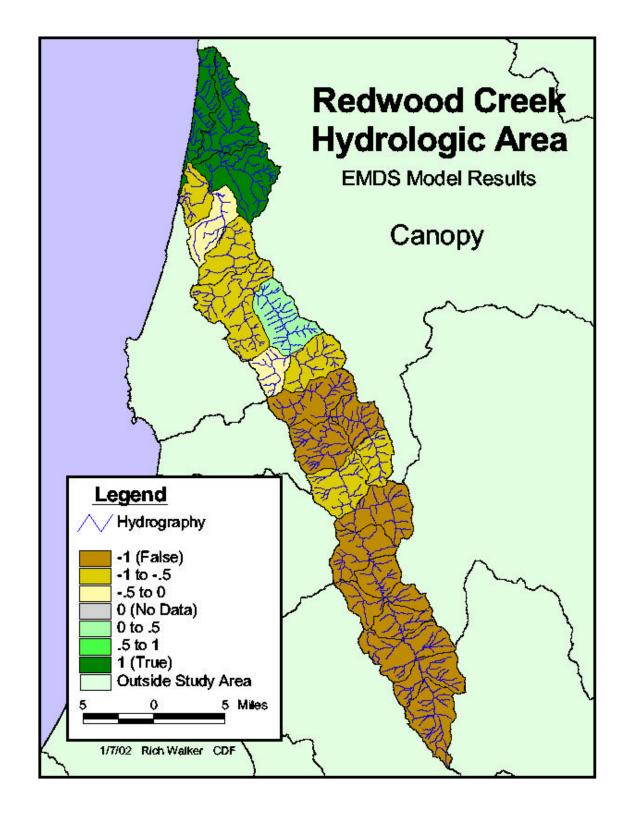
The condition of the vegetation canopy in the Planning Watershed is suitable for sustaining healthy populations of native anadromous salmonids

Evaluated from percentage of vegetation within pre-EuroAmerican range of variation, using total area in size classes with dbh >= 24".

Break Points: 30% low, 75% high

Units: area/area (%)





#### CANOPY -

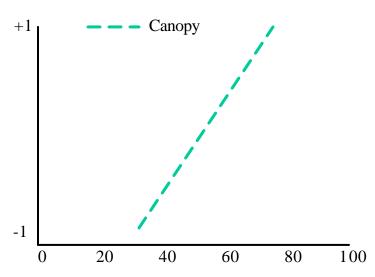
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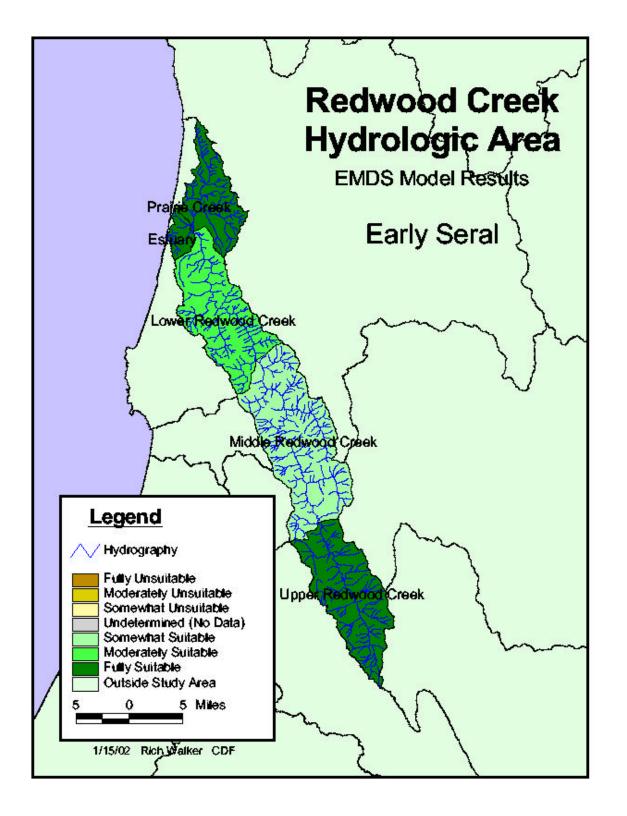
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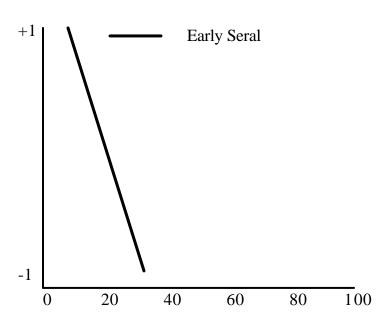
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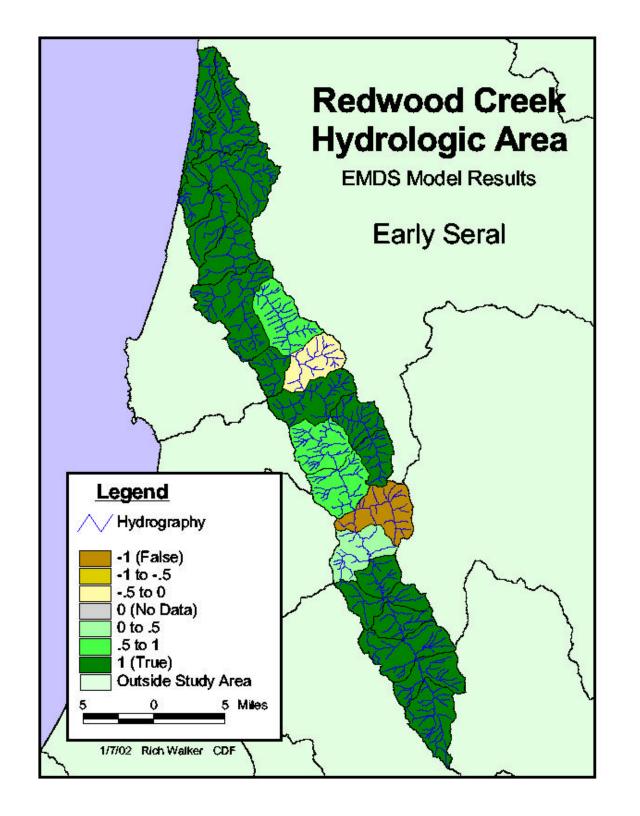
The amount of the early seral vegetation in the upland of the Planning Watershed is suitable for sustaining healthy populations of native anadromous salmonids

Evaluated from the percentage of area in vegetation <= 10 years since last stand-replacing disturbance

Break Points: 10% low, 30% high

<u>Units</u>: area/area (%)





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